AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0026] with the following:

Figure 2 shows a cross section of an embodiment of the camshaft lubrication invention ~~rotatably~~ rotationally journalled in a plurality of bearings.

Please replace paragraph [0033] with the following:

An embodiment of the invention can comprise an airplane (not shown) having an aircraft engine comprising a block (1) with at least one cylinder (2). A reciprocal means (3), such as a piston, can be slidingly engaged to the surface of the cylinder (2). A reciprocal movement to rotational movement conversion element (4), such as a crankshaft, can be rotatably coupled to the reciprocal means (3) and rotationally journalled to the block (1). A cylinder head (5) can be coupled to the block to enclose the volume of the cylinder (2) and make the reciprocal means (3) responsive to changes in pressure within the cylinder (2). At least two conduits (7) (8) can traverse the cylinder head (5) to fluidicly couple the volume of the cylinder (2) to a fuel source (not shown) and to the atmosphere respectively. At least one valve (9)(10) is coupled to each of the two conduits (7)(8) to regulate the flow of fuel into and fuel combustion products out of the cylinder (2). Each valve can be made operationally responsive to the rotation of a camshaft lobe (11) coupled to a hollow ~~shaft (12)~~ shaft (19) ~~rotatably~~ rotationally journalled to a plurality of bearing means (13). The shape, orientation, and rotation speed of the cam lobe(s) (11) can be adjusted to open and close the intake valve (9) and the exhaust valve (10) to correspond to the reciprocal movement of the reciprocal means (3). The cam lobe can be adjusted to allow intake valve (9) to open during the down stroke of the reciprocal means (3) in the cylinder (2). Fuel can be drawn from a fuel system (not shown) into the cylinder (2) through a first conduit (7). The cam lobe (11) continues to rotate allowing the intake valve (9) to close. The fuel drawn into the cylinder (2) is compressed by the upstroke of the reciprocal means (3) and is ignited by an ignition element (13) and the expanding gases from the combustion of the fuel propel the reciprocal means (3) into the next down stroke. On the subsequent upstroke of the reciprocal

means (3) in the cylinder (2) the cam lobe (11) corresponding to the exhaust valve (10) opens the valve to allow the combustion products of the fuel or exhaust to exit through the second conduit (8) to the atmosphere. The reciprocal movement to rotational movement conversion element (4) can be made to rotate the propeller of an aircraft (not shown), or power various other types of devices.

Please replace paragraph [0036] with the following:

Now referring primarily to Figure 2, the camshaft lubrication system invention can comprise a plurality of bearing means (13) each of the bearing means (13) having a lubrication supply conduit (18). Lubricant (14) can be supplied to each of the lubrication supply conduits (18) from the lubricant reservior (15) by pressurizing the lubricant with the lubricant pressurization element (16). A hollow ~~camshaft (12)~~ camshaft (19) ~~can be rotatably journalled~~ can be rotationally journelled to each of the plurality of bearing means (13) and a camshaft lubrication supply duct (20) can traverse each journal surface (21) and the interior surface (22) of the hollow camshaft (19). Each camshaft lubrication supply duct (20) can be rotatably aligned with a corresponding each lubrication supply conduit (18). During the period that the lubrication supply conduit (18) and the camshaft lubrication supply duct are ~~fluidically~~ fluidicly coupled lubricant can be transferred to the interior volume (23) of the hollow ~~camshaft (12)~~ camshaft (19). The lubricant (14) can then migrate along the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). Each cam lobe (11) can have a cam surface lubrication supply duct (24) that traverses the cam surface (25) and the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). The lubricant (14) migrating along the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) can enter each cam surface lubrication supply duct (24) and can be delivered to the corresponding cam surface (25).

Please replace paragraph [0037] with the following:

By providing a camshaft lubrication supply ~~duct (18)~~ duct (20) at each ~~journalled~~ journal surface (21) lubricant can be delivered to each cam surface lubrication supply duct (24) even

when the hollow ~~camshaft (12)~~ camshaft (19) is operated out of horizontal. As such, utilizing the invention, lubricant (14) can be delivered to each of the cam surfaces (25) even when an aircraft has a pitch of 5 degrees, 10 degrees, 15 degrees, 20 degrees, or even greater pitch. As can be understood, the diameter of the lubrication supply conduit (18) and the diameter of the camshaft lubrication supply ducts (20) traversing each journal to the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) can be varied depending on the application. In some applications, a plurality of camshaft lubrication supply ducts (20) can traverse on each journal surface (21) and the interior surface of the hollow ~~camshaft (12)~~ camshaft (19).

Please replace paragraph [0038] with the following:

For example, specifically when modifying a Lycoming engine camshaft (Part No. 535661), the camshaft lubrication supply ducts (20) and the cam surface lubrication supply ducts (24) can be about one-sixteenth of an inch. See, Firewall Forward Technologies Technical Report No. 4, hereby incorporated by reference herein. In aircraft engine applications, where the amount of lubricant (14) available and the size of the lubricant pressurization element (16) may be limited it may be necessary to consider the amount of lubricant that can be delivered to the interior volume of the hollow ~~camshaft (12)~~ camshaft (19) while maintaining normal oil pressure. See, Firewall Forward Technologies Technical Report No. 2, hereby incorporated by reference herein. While this particular example of an embodiment of the invention illustrates the use of the invention in Lycoming aircraft engines, the invention can also be used in other types of aircraft engines, as well as, automobile engines, marine engines, motorcycle engines, or the like.

Please replace paragraph [0039] with the following:

Now referring primarily to Figures 3 and 4, a particular embodiment of the invention provides an angular displacement between the camshaft lubrication supply duct(s) (20) and the cam surface lubrication supply duct(s) (24). As can be understood from Figure 8, when a lubrication supply conduit (18) and a camshaft lubrication supply duct (20) are aligned lubricant

(14) can be propelled from the camshaft lubrication supply duct aperture (26) with sufficient force to create a significant lubricant pressure gradient (27) having an important effect on the interior surface (22) of the hollow ~~shaft 12~~ shaft (19) opposite the camshaft lubrication supply duct aperture (26). The lubricant pressure gradient (27) can be sufficient to prevent or impede the migration of oil over a portion of the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). If a cam surface lubrication supply duct (24) has an aperture (28) on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) within this area of significant gradient, lubricant may not flow to the cam surface lubrication supply duct aperture(s) (28).

Please replace paragraph [0040] with the following:

As shown primarily by Figures 3 and 4, particular embodiments of the invention may comprise a plurality of bearing means (13) in which a hollow ~~camshaft (12)~~ camshaft (19) is journaled. A single cam lobe (11) can have a position adjacent to a journal surface (21) on the hollow ~~camshaft (12)~~ camshaft (19). In the case of a single cam lobe (11) adjacent to a ~~journaled~~ journal surface (21), where the camshaft lubrication supply duct aperture (26) has a location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) and the cam surface lubrication supply duct aperture (28) has a location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19), the angular displacement of the camshaft lubrication supply duct aperture (26) and the cam surface lubrication supply duct aperture can be between about zero degrees and thirty degrees. In this manner, the pressure dam created by the lubricant pressure gradient (27) can have little if no effect on the flow of lubricant (14) to the cam surface lubrication supply duct aperture (28) because, as shown in Figure 3, the aperture is outside the area of significant gradient.

Please replace paragraph [0041] with the following:

Now referring primarily to Figures 5 through 7, particular embodiments of the invention can comprise a plurality of bearing means (13) in which a hollow ~~camshaft (12)~~ camshaft (19) can be journaled. A first cam lobe (11) can have a position adjacent to a camshaft journal

surface (21) of a hollow camshaft (19) and have a cam surface lubrication supply duct (24) with an aperture (28) having a first location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). A second cam lobe (29) can have a position on the opposite side of the same camshaft journal (21) and have a second cam surface lubrication supply duct (30) having an aperture (31) having a second location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). In this case, the camshaft lubrications supply duct (20) can have an angular displacement that approximately bisects the smaller angle of displacement defined by the location of the first cam surface lubrication supply duct ~~aperture (30)~~ aperture (28) and the second cam surface lubrication supply duct ~~aperture (28)~~ aperture (31). See Figure 4, cross section A-A', for an example of a particular embodiment of the invention.

Please replace paragraph [0042] with the following:

In certain applications there may be additional cam lobes adjacent to either the first cam lobe (11) or the second cam lobe (29), or both. In most applications, the location of the cam surface lubrication supply duct apertures corresponding to these additional lobes need not be considered as the pressure dam resulting from the lubricant pressure gradient (27) does not significantly effect the migration of the lubricant (14) on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) beyond the distance of the first cam lobe on either side of the corresponding journal surface (21) because, as shown in figure 3, the gradient is no longer significant.

Please replace paragraph [0043] with the following:

Now referring primarily to Figures 8 through 10, certain embodiments of the invention provide at least two (or multiple) cam surface lubrication supply ducts (24)(32). As can be understood from Figure 8, lubricant (14) migrates to the cam surface supply duct aperture (28) located on the interior surface (22) of a hollow ~~camshaft (12)~~ camshaft (19) enters the cam surface supply duct aperture (28) and travels to the cam surface (25). Migration of lubricant (14) can be reduced or there may be no migration of lubricant (14) down stream of each lubrication

supply duct aperture. As such, a second cam surface supply duct aperture (28) located to take advantage of the same lubricant stream as the first cam surface supply duct aperture (i.e. having a location directly downstream of the first cam surface supply duct aperture) may receive a reduced amount or may not receive any amount of lubricant (14) to transfer to the cam surface (11).

Please replace paragraph [0044] with the following:

Now referring primarily to Figures 9 and 10, certain embodiments of the invention can comprise a plurality of bearing means (13) in to which a hollow ~~camshaft (12)~~ camshaft (19) is journaled. A cam lobe (11) can have a position on the hollow ~~camshaft (12)~~ camshaft (19). The cam lobe (11) can further comprise a first cam surface lubrication supply duct (24) with an aperture (28) having a first location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19). The cam lobe (11) can further comprise a second cam surface lubrication supply duct (32) with an aperture (28) having a second location on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19).

Please replace paragraph [0045] with the following:

With respect to some embodiments of the invention, the location of the first cam surface lubrication supply duct aperture (28) on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) and the second cam surface lubrication supply duct aperture (33) on the interior surface (22) of the hollow ~~camshaft (12)~~ camshaft (19) can have a angular displacement. With respect to particular embodiments of the invention for aircraft engines, two cam surface lubrication supply ducts can have a angular displacement defined by a distance between the circumferences of the respective apertures equivalent to about one diameter of the cam surface lubrication supply duct aperture (28).

Please replace paragraph [0046] with the following:

Now referring primarily to Figures 5 and 9, it can be understood that certain embodiments of the invention can provide cam surface supply ducts (24)(30)(32) that are differentially configured to supply differential amounts of lubricant to each of a plurality of cam surfaces (25)(34) to substantially equalize the amount of wear to such plurality of cam surfaces. With respect to certain camshafts, the failure rate of one or more of the cam lobes (11) within a plurality of cam lobes (11) of a hollow ~~camshaft (12)~~ camshaft (19) can have a statistically higher failure rate than the other cam lobes within the plurality. By enlarging the diameter of the cam surface supply ducts corresponding to those cam lobes having statistically higher failure rates the wear to these cam lobes can be made substantially equal to the failure rates of the other cam lobes.

Please replace paragraph [0047] with the following:

Again referring to Figure 3, certain embodiments of the invention can further comprise a hollow camshaft end seal (35). The hollow camshaft end seal (35) can comprise a freeze plug or other suitable seal device that can be pressed into both ends of the hollow ~~camshaft (12)~~ camshaft (19) to prevent lubricant from migrating from either hollow camshaft end. The hollow camshaft end seal (35) at the forward end of the hollow camshaft can have a vent hole (36) (for many applications about one-sixteenth inch diameter) that traverses the exterior surface to the interior surface of the hollow camshaft end seal (35). The vent hole (36) can have a location at the rotation axis of the hollow ~~camshaft (12)~~ camshaft (19). The vent hole (36) can allow excess oil, gases, vapor, or particulates, if any, to escape thereby minimizing condensation or pressure buildup inside the hollow ~~camshaft (12)~~ camshaft (19). By allowing the gases and vapor to escape, disruption or impediments to lubricant (14) flow through the cam surface supply ducts (24)(30)(32) can be reduced.